



UTC Region 1&2 Combined Meeting
September 21 – 23, 2022
DoubleTree Hotel ~ Nashua, NH

Meeting Agenda

- The conference will be held at the DoubleTree Hotel in Nashua, NH located at 2 Somerset Parkway, Nashua, NH 03063.
- The registration desk, education sessions and exhibit area will be held on main floor of the hotel. Signs will be posted in the lobby to direct you to the meeting space.
- Additional information may be found in the [Region 1&2 Community on UTC's NetWorks site at this link](#) and on the [event website at this link](#).
 - The NetWorks community is only open to registered attendees of the meeting. [Click here to register now.](#)

Wednesday, September 21st

11:00 AM – 5:00 PM Meeting Registration

1:00 – 1:15 PM Welcome Remarks

Presenters: **Rima Crepeau, Region 1 Chair – National Grid**
Tony Suppa, Region 2 Chair - Public Service Enterprise Group
Dewey Day, PG&E – UTC Board Chair

1:15 – 2:15 PM Relaying over IP Systems

1. Introduction

The communication channel is a part of the protection system and enables fulfillment of the protection system requirements. Generally, communication technologies evolve much faster than protective relaying technologies. The current shift towards packet-based data switching, such as Ethernet communications, presents new challenges as characteristics of new packet-based communications are less deterministic than those of traditional Time Division Multiplexing (TDM). By its nature performance of packet-based switching depends on resource availability, while TDM communications utilize dedicated resources.

As protection engineers face the transition to Ethernet-based communications, understanding their operation and expected performance becomes crucial for achieving required reliability of the protection systems.

2. Scope

This report discusses the use of Ethernet transport for teleprotection services (directional comparison pilot protection, transfer trip and line current differential protection); plus, the circuit performance considerations for these circuits including latency, channel asymmetry, delay variation (jitter), failover considerations. Legacy TDM interfaces carried over these

networks, synchronous 64 kbps (electrical & optical) and asynchronous EIA 232 will be impacted more severely than teleprotection signals that are natively Ethernet. This report provides general considerations applicable to Ethernet and other packet-based communication technologies. Environmental conditions are out of scope for this report.

Speaker: **Tom Dahlin, Senior Communications Application Engineer - SEL**

2:15 – 2:30 PM **Networking Break**

2:30 – 3:30 PM **6 GHz Update**

Two years after the FCC approved the highly controversial rule change that opened the 6 GHz microwave band to unlicensed use, licensed microwave incumbents are left to fend for themselves against interference from Wi-Fi 6E as these unlicensed devices continue to gain market acceptance. Real-world testing performed by the presenters confirmed the concerns of many, that FCC-certified Low Power Indoor (LPI) devices will harmfully interfere with licensed 6 GHz microwave networks. Are 6E device deployments tracking with the proponents' forecast of 958 million of these networks in the continental US by 2025? Are incumbents seeing the impact to their systems? This presentation will address these questions and offer mitigation strategies that are currently being implemented or considered by utility industry members. Presenters will also provide an update on outdoor Standard Power Wi-Fi 6E device and Automatic Frequency Control (AFC) standards, development, and deployment timelines.

Speakers: **Dave Hattey, Senior Associate Consultant - Lockard & White**
Brett Kilbourne, SVP of Policy & General Counsel - UTC

3:30 – 4:30 PM **State of the Union Utility Presentations**

The State of the Union Presentation is an opportunity to give an update on staff, projects, and plans taking place at each utility. The presentations are generally more specific to the telecom and IT areas, but interesting and major projects in other departments will often be discussed as well. The presentations are a good way to promote discussion between utilities about ongoing projects, lessons learned, etc.

Speakers: **Various Utility Members**

5:00 - 7:00 PM **Networking Reception with Exhibitors**

Thursday, September 22nd

8:00 AM - 5:00 PM **Meeting Registration**

8:00 AM **Attendee Breakfast**

9:00 – 10:00 AM Converged Utility Grade Networks: Practical Considerations and Real-World Examples

Many utilities have an operations network and an enterprise network, both of which have different characteristics and requirements. Many utilities have multiple wide area network technologies such as time division multiplexing, SONET, and Ethernet/IP creating an administrative burden and increasing the total cost of ownership. The presentation will consist of practical considerations and real-world examples when it comes to transitioning to a converged network built on service routing architecture.

Speaker: **Jeff Maze, Customer Solutions Architect, U.S. Enterprise – Energy - Nokia**

10:00 – 10:30 AM Networking Break

10:30 – 11:30 AM UTC Leadership Address & Federal Advocacy Update

Speakers: **Dewey Day, PG&E/UTC Board Chair**
Brett Kilbourne, SVP of Policy and General Counsel – UTC
Rima Crepeau, Region 1 Chair – National Grid
Tony Suppa, Region 2 Chair - Public Service Enterprise Group
UTC Advocacy team

11:30 AM – 1:00 PM Networking Lunch with Exhibitors

1:00 – 2:00 PM Extending the Enterprise Network to Remote Assets Using LEO Satellite-Based Solutions

The recent availability of commercial LEO satellite services provides utilities with a new ubiquitous coverage, high bandwidth, low latency connectivity option to consider across a wide range of use cases. This presentation will focus on the current performance characteristics of the Starlink LEO constellation based on real world deployments and how LEO satellite technology can be combined with access technologies and other networking solutions to extend the enterprise network environment for use cases including disaster recovery, substation connectivity, sensor and device connectivity, etc.

Speaker: **Philip Liddell, Business Development – Starlight Technologies, Inc.**

2:00 – 3:00 PM Pole Attachment Regulation & Broadband Legislation Update

Speaker: **Brett Kilbourne, SVP of Policy & General Counsel - UTC**

3:00 – 3:30 PM Networking Break

3:30 – 4:30 PM Regional Meeting – Utilities Only

This meeting is closed to individuals not considered core members of UTC.

5:00 – 7:00 PM Networking Reception

Friday, September 23rd

8:00 – 11:00 AM Meeting Registration

8:00 AM Attendee Breakfast

9:00 – 10:00 AM RF Signage and RF Safety

This session will review the requirements concerning RF signage requirements for small cells and other RF emitting antennas on a utility pole. The session will also review some of the RF Safety requirements for those workers who may be working on or near RF emitting antennas.

Speaker: Ken Hill, Sr. Manager – Safety - Crown Castle

10:00 – 11:00AM Achieving resilient and assured PNT in secure smart grids

Cyber threats are at an all-time high, creating unprecedented risk to smart grid synchronization. This webinar will provide real-world information, including architectures and best practices to synchronize smart grids with resilient, assured positioning, navigation and timing (PNT) capabilities.

- We'll cover use cases like new bidirectional distributed energy resources (DERs), including wind farms, solar plants and battery storage. Unidirectional legacy grid protection systems and MPLS-migrating telecom networks will also be discussed, and we'll look into strategies to protect PNT services and prevent devastating grid blackouts.
- The webinar will explore how timing enables positioning and navigation services and is critical for precise network synchronization. This includes accurately locating power line faults and synchronizing distributed control and protection systems. We'll show how accurate timing is key for rerouting power flows away from transmission outages and for balancing power supply and demand through precise data record timestamping in end-to-end network grids.
- Additionally, we'll present best practices and cost-effective sync architectures for different types of grid sites, from core to substation to DER. These approaches will empower grid operators to effectively plan sync for their complex, all-IP network digital transformation.

**Speaker: Daniel B. Burch, Sr Sync Business Development Manager, NA,
Energy/Transportation/Public Safety, Oscilloquartz**

11:00 – 11:15 AM Networking Break

11:15 AM – 12:15 PM 5G Small Cell and Decorative Lighting

Provide a detailed description of the work involved from the utility standpoint to work with a wireless carrier to provide small cell/ 5G decorative light poles that would be owned by the utility and allow the wireless carrier to deploy small cell / 5G coverage in strategic areas for the wireless carriers. The presentation would cover the following: * agreement between the carrier and the utility * selling the idea to the utility * obtaining approval from the municipality * developing design standards that work for the utility, the wireless carrier and the municipality * building prototypes of the decorative light poles before they are deployed so that the utility can become familiar with the construction and operation of the decorative light pole * how are the decorative light poles constructed and which party is responsible for which portions of the construction * processes for review and approval of design and construction of the decorative light poles.

Speaker: Tony Suppa, Project Manager – Public Service Enterprise Group

12:15 – 12:30 PM Round Table Discussion & Wrap-up